

# Session 8: Advances in retroreflector arrays and their modeling

Chairs:

L. Grunwaldt, A Sokolov, S. Wetzel

# Session 8 Wrap-up

- There were seven presentations within this session which covered topics in
  - Potential new array designs for
    - Degnan with non-planar arrays for GNSS sats (Degnan)
    - Lunar solid cube considerations for thermal issues (Currie)
    - Continuing to push for large hollow cubes on the moon (Yeh)
  - Advances in LRA analysis (Lageos-2 and circular polarization – Arnold) rounding out polarization
  - Laboratory testing of inexpensive small cubes with bright futures (Grunwaldt)
  - Status of the new array designs in Russia and finding out how the smallest of them Lomonosov are working on-orbit (Sokolov)
  - Going Big to go small or pushy on space debris while giving the ILRS a way to quantify laser density on 2 new satellites (Greene)

# Conclusions of Session 8

- Replacing planar arrays with can improve accuracies on GNSS satellites.
- Using circularly polarized lasers and concentrating on single photon returns are two good ways of getting to mm accuracies
- Tiny 60 g retroreflectors can be successfully tracked and may open the door for missions who need to know that panels or booms are deployed
- Small inexpensive cube corners may allow for more cost effective solution than tightly specified cube corners for LEO arrays
- Large (10cm) retroreflectors for LLR stress thermal issues more than others.
- Another way of lunar and relay orbital ranging is with the much larger hollow cube, but does the cube have the ability and stability to meet ranging on a very short schedule?
- Large telescopes with <100KW CW lasers may be the next best thing to improve collision avoidance.